

Appeal No. 2015-1080

**IN THE UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT**

MCRO, INC., DBA PLANET BLUE,

Plaintiff-Appellant,

v.

BANDAI NAMCO GAMES AMERICA INC., NAUGHTY DOG, INC.,
KONAMI DIGITAL ENTERTAINMENT, INC., SEGA OF AMERICA, INC.,
ELECTRONIC ARTS, INC., OBSIDIAN ENTERTAINMENT, INC., DISNEY
INTERACTIVE STUDIOS, INC., SQUARE ENIX, INC., NEVERSOFT
ENTERTAINMENT, INC., TREYARCH CORPORATION, CAPCOM USA,
INC., SONY COMPUTER ENTERTAINMENT AMERICA LLC, ATLUS
U.S.A., INC., SUCKER PUNCH PRODUCTIONS, LLC, INFINITY WARD,
INC., LUCASARTS, A DIVISION OF LUCASFILM ENTERTAINMENT CO.
LTD. LLC, WARNER BROS. INTERACTIVE ENTERTAINMENT, A
DIVISION OF WARNER BROS. HOME ENTERTAINMENT INC.,
ACTIVISION PUBLISHING, INC., BLIZZARD ENTERTAINMENT, INC.,
VALVE CORPORATION, CODEMASTERS USA GROUP, INC.,
CODEMASTERS SOFTWARE INC., CODEMASTERS, INC., AND THE
CODEMASTERS SOFTWARE COMPANY LIMITED,

Defendants-Appellees.

2015-1080, -1081, -1082, -1083, -1084, -1085, -1086, -1087, -1088, -1089, -1090,
-1092, -1093, -1094, -1095, -1096, -1097, -1098, -1099, -1100, -1101

**Appeals from the United States District Court
for the Central District of California in Nos. 2:12-CV-10322, 2:12-cv-10323,
2:12-cv-10327, 2:12-cv-10329, 2:12-cv-10331, 2:12-cv-10333, 2:12-cv-10335,
2:12-cv-10337, 2:12-cv-10338, 2:12-cv-10341, 2:12-cv-10342, 8:13-cv-01870,
8:13-cv-01874, 2:14-cv-00332, 2:14-cv-00336, 2:14-cv-00352, 2:14-cv-00358,
2:14-cv-00383, 2:14-cv-00389, 2:14-cv-00417, 2:14-cv-00439,
Judge George H. Wu.**

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June 12, 2015

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CERTIFICATE OF INTEREST

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1. The full name of every party or amicus represented by us is:

Docket Number	Parties Represented
No. 15-1080	Bandai Namco Games America Inc. (now BANDAI NAMCO Entertainment America Inc.)
No. 15-1082	Sega of America, Inc.
No. 15-1083	Electronic Arts Inc.
No. 15-1085	Disney Interactive Studios, Inc.
No. 15-1087	Capcom USA, Inc.
No. 15-1089	Neversoft Entertainment, Inc.
No. 15-1090	Treyarch Corporation
No. 15-1092	Atlus U.S.A., Inc.
No. 15-1094	Activision Publishing, Inc. and Blizzard Entertainment, Inc.
No. 15-1095	LucasArts, a division of Lucasfilm Entertainment Company Ltd. LLC
No. 15-1097	Infinity Ward, Inc.
No. 15-1098	Warner Bros. Interactive Studios, a division of Warner Bros. Home Entertainment Inc.

2. The name of the real party in interest represented by us is:

None

3. All parent corporations and any public companies that own 10 percent or more of the stock of the parties represented by us are:

Docket Number	Parties Represented	All parent corporations and any public companies that own 10 percent or more of the stock of the party represented by us
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No. 15-1082*	Sega of America, Inc.	SEGA Games Co., Ltd. (formerly Sega Corporation); SEGA Holdings Co., Ltd.; Sega Sammy Holdings Inc.
No. 15-1083*	Electronic Arts Inc.	None
No. 15-1085*	Disney Interactive Studios, Inc.	Disney Enterprises, Inc.; The Walt Disney Company
No. 15-1087*	Capcom USA, Inc.	Capcom Co., Ltd.
No. 15-1089*	Neversoft Entertainment, Inc.	Activision Publishing, Inc.; Activision Blizzard, Inc.; ASAC II LP
No. 15-1090*	Treyarch Corporation	Activision Publishing, Inc.; Activision Blizzard, Inc.; ASAC II LP
No. 15-1092*	Atlus U.S.A., Inc.	Atlus Co., Ltd.; SEGA Games Co., Ltd. (formerly Sega Corporation); SEGA Holdings Co., Ltd.; Sega Sammy Holdings Inc.
No. 15-1094*	Activision Publishing, Inc. and Blizzard Entertainment, Inc.	Activision Blizzard, Inc.; ASAC II LP
No. 15-1095*	LucasArts, a division of Lucasfilm Entertainment Company Ltd. LLC	Lucasfilm Entertainment Company Ltd. LLC; Lucasfilm Ltd. LLC; The Walt Disney Company

Docket Number	Parties Represented	All parent corporations and any public companies that own 10 percent or more of the stock of the party represented by us
No. 15-1097*	Infinity Ward, Inc.	Activision Publishing, Inc.; Activision Blizzard, Inc.; ASAC II LP
No. 15-1098*	Warner Bros. Interactive Studios, a division of Warner Bros. Home Entertainment Inc.	Warner Bros. Home Entertainment Inc.; Warner Bros. Entertainment Inc.; Warner Communications LLC; Historic TW Inc.; Time Warner Inc.

4. The names of all law firms and the partners or associates that appeared for the parties now represented by us in the trial court or are expected to appear in this Court are:

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No. 15-1092*	Atlus U.S.A., Inc.	Sonal N. Mehta, Edward R. Reines, Marion Read, Evan N. Budaj**, Justin M. Lee** Weil, Gotshal & Manges LLP
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Infinity Ward, Inc.; LucasArts, a division of
LucasFilm Entertainment Company Ltd.
LLC; Warner Bros. Interactive
Entertainment, a division of Warner Bros.
Home Entertainment Inc.; Activision
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Entertainment, Inc.

CERTIFICATE OF INTEREST

Counsel for Defendants-Appellees Konami Digital Entertainment, Inc. and Square Enix, Inc. certifies the following:

1. The full name of every party or amicus represented by us is:

Docket Number	Parties Represented
No. 15-1081	Konami Digital Entertainment, Inc.
No. 15-1088	Square Enix, Inc.

2. The name of the real party in interest (if the party named in the caption is not the real party in interest) represented by us is:

N/A

3. All parent corporations and any publicly held companies that own 10% or more of the stock of the party or amicus curiae represented by us are:

Docket Number	Parties Represented	All parent corporations and any public companies that own 10 percent or more of the stock of the party represented by us
No. 15-1081	Konami Digital Entertainment, Inc.	Konami Digital Entertainment, Inc. is a subsidiary of Konami Corporation of America which, in turn, is a subsidiary of Konami Corporation, a publicly traded corporation. No other corporation is a parent or owns 10 percent or more of Konami Digital Entertainment, Inc.

Docket Number	Parties Represented	All parent corporations and any public companies that own 10 percent or more of the stock of the party represented by us
No. 15-1088	Square Enix, Inc.	Square Enix, Inc. is a wholly owned subsidiary of Square Enix of America Holdings, Inc. which, in turn, is a wholly owned subsidiary of Square Enix Holdings Co., Ltd., a publicly traded corporation. No other corporation is a parent or owns 10 percent or more of Square Enix, Inc.

4. The names of all law firms and the partners or associates that appeared for the party or amicus now represented by us in the trial court or are expected to appear in this court are:

Docket Number	Parties Represented	Law Firms, Partners and Associates
No. 15-1081	Konami Digital Entertainment, Inc.	Wendy J. Ray, Benjamin J. Fox, Vincent J. Belusko, Ashleigh K. Landis, Jason J. Lee* MORRISON & FOERSTER LLP
No. 15-1088	Square Enix, Inc.	Wendy J. Ray, Benjamin J. Fox, Vincent J. Belusko, Ashleigh K. Landis, Jason J. Lee* MORRISON & FOERSTER LLP

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1. The full name of every party or amicus represented by us is:

Docket Number	Parties Represented
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No. 15-1093	Sucker Punch Productions, LLC
No. 15-1086	Naughty Dog, Inc.

2. The name of the real party in interest (if the party named in the caption is not the real party in interest) represented by us is:

N/A

3. All parent corporations and any publicly held companies that own 10% or more of the stock of the party or amicus curiae represented by us are:

Docket Number	Parties Represented	All parent corporations and any public companies that own 10 percent or more of the stock of the party represented by us
No. 15-1096	Sony Computer Entertainment America LLC	Sony Computer Entertainment America LLC is an indirect, wholly-owned subsidiary of Sony Corporation.
No. 15-1093	Sucker Punch Productions, LLC	Sucker Punch Productions, LLC is a wholly-owned subsidiary of Sony Computer Entertainment America LLC, which is an indirect, wholly-owned subsidiary

Docket Number	Parties Represented	All parent corporations and any public companies that own 10 percent or more of the stock of the party represented by us
		of Sony Corporation.
No. 15-1086	Naughty Dog, Inc.	Naughty Dog, Inc. is a wholly-owned subsidiary of Sony Computer Entertainment America LLC, which is an indirect, wholly-owned subsidiary of Sony Corporation.

4. The names of all law firms and the partners or associates that appeared for the party or amicus now represented by us in the trial court or are expected to appear in this court are:

Docket Number	Parties Represented	Law Firms, Partners and Associates
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No. 15-1093	Sucker Punch Productions, LLC	B. Trent Webb, Tony Diab, Jamie Kitano, John D. Garretson, Lynn C. Herndon, Douglas Wayne Robinson and Beth Larigan of Shook, Hardy & Bacon LLP; Jonathan N. Zerger and Albert F. Harris III formerly of Shook, Hardy & Bacon LLP; and Jack B. Blumenfeld and Rodger Dallery Smith II of Morris, Nichols, Arsht & Tunnell LLP.

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No. 15-1100	Codemasters USA Group, Inc. and The Codemasters Software Company Limited
No. 15-1101	The Codemasters Software Company Limited and Codemasters, Inc.

2. The name of the real party in interest represented by us is:

None

3. All parent corporations and any public companies that own 10 percent or more of the stock of the parties represented by us are:

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ABBREVIATIONS AND CONVENTIONS

<u>Abbreviation</u>	<u>Meaning</u>
“McRo”	Plaintiff-Appellant
“BSA”	<i>Amicus Curiae</i> BSA The Software Alliance
“Section 101 Motion”	Defendants’ Motion for Judgment on the Pleadings Based on Unpatentability Under 35 U.S.C. § 101 (A4659)
“IPR”	<i>Inter Partes</i> Review
“PTAB”	Patent Trial and Appeal Board
“’576 patent”	U.S. Patent No. 6,307,576 (A27)
“’278 patent”	U.S. Patent No. 6,611,278 (A39)
“Patents-in-Suit”	The ’576 and ’278 patents
“PB Opening CC”	McRo’s opening claim construction brief (A3036)
“BB”	McRo’s Blue Brief
“BSAGB”	BSA’s Green Brief

PRELIMINARY STATEMENT

The Patents-in-Suit seek to claim a concept that is inherent to human speech—that a human mouth will look a certain way when speaking a certain sound. Yet, the Patents-in-Suit explicitly acknowledge their purpose is simply to speed up a long-practiced, conventional method of synchronizing mouth movement with speech by automating it on a general-purpose computer. And the only claim requirement McRo purports to be novel and unconventional—the use of unlimited and undefined computer-programmed “rules” to be executed automatically—would capture all such rules, including those the inventor never conceived.

Hoping to gloss over these undisputable facts, McRo instead invokes a supposed parade of horrors that would result from an affirmance here. McRo would have this Court believe the District Court’s decision in this case is evidence of some sort of runaway train of unpatentability rulings in the wake of the Supreme Court’s ruling in *Alice*, and that the Court must put the brakes on by finding these claims patentable lest all software patents be overrun. The reality is far less dramatic. This appeal presents a distinct set of facts compelling a finding of unpatentability here, but counseling against broad application to other cases, let alone all software patents.

Cloaking itself in alarmism, McRo urges the Court to undertake an analysis that contravenes binding law and basic logic. To wit, McRo would have this Court (i) look superficially at the claims and determine they are patentable because they appear “technological;” (ii) ignore the actual claim language (and McRo’s own positions as to claim scope at the District Court) to find that two explicitly exemplary passages of the specification somehow limit the claimed method in a manner sufficient to confer patentability; (iii) believe that the claimed process, which requires no more than basic mathematical calculation, is somehow “concrete” and advances the technological arts; and (iv) reverse the judgment here based on the specter that this ruling will somehow invalidate all software patents.

But the Section 101 jurisprudence demands a far more nuanced analysis—one that focuses on what the Patents-in-Suit actually *claim*, not litigation-driven positions on what the patent-holder now argues was invented. Upon such an analysis, the claimed method is unpatentably abstract.

STATEMENT OF RELATED CASES

No appeal from this civil action was previously before this or any other appellate court.

I. THE CENTRAL DISTRICT OF CALIFORNIA CASES

On December 4, 2012, McRo filed sixteen patent infringement matters in the Central District of California. All sixteen either have been dismissed or are part of this consolidated appeal.

On January 15, 2014, eight matters originally filed in the District of Delaware were transferred to the Central District, all of which are part of this consolidated appeal.

On November 27, 2013, McRo filed five additional cases in the Central District. All five either have been dismissed or are part of this consolidated appeal.

II. THE DISTRICT OF DELAWARE CASES

On November 21, 2012, McRo filed thirteen cases in the District of Delaware. As noted above, eight were transferred to Central District of California and are part of this appeal. The other five cases remain in Delaware, where they are stayed pending this appeal. *McRo, Inc. v. Bethesda Softworks LLC*, No. 12-cv-1509 (D. Del.); *McRo, Inc. v. Harmonix Music Systems Inc.*, No. 12-cv-1510 (D. Del.); *McRo, Inc. v. Rockstar Games, Inc.*, No. 12-cv-1513 (D. Del.); *McRo, Inc. v. Take-Two Interactive Software, Inc.*, No. 12-cv-1517 (D. Del.); *McRo, Inc. v. 2K Games, Inc.*, No. 12-cv-1519 (D. Del.).

Counsel are aware of no other pending case that will directly affect or be directly affected by this Court's decision in this appeal.

JURISDICTIONAL STATEMENT

On September 22, 2014, the District Court granted Appellees' Motion for Judgment on the Pleadings Based on Unpatentability Under 35 U.S.C. § 101. (A1-23.) On October 22, 2014, McRo appealed. (A5324-25.) On October 31, 2014, the District Court entered final judgment. (A24-26.)

The District Court had jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a). This Court has jurisdiction under 28 U.S.C. § 1295(a)(1).

STATEMENT OF THE ISSUE

Did the District Court correctly determine that Appellant's claims directed to the abstract idea of synchronizing animated mouth movement to speech, using a generic computer to automate a conventional process, are directed to unpatentable subject matter under Section 101? (Yes.)

STATEMENT OF THE CASE

The District Court devoted substantial attention to this litigation before dismissing it nearly two years into the case. After the District Court considered and decided claim construction (following the submission of technology tutorials,

full briefing, and a day-long *Markman* hearing),¹ Appellees jointly moved for judgment on the pleadings based on unpatentability under Section 101. (A4659.) After considering full briefing² and oral argument, the District Court granted the Section 101 Motion and entered final judgment. (A1-23, A24-26.)

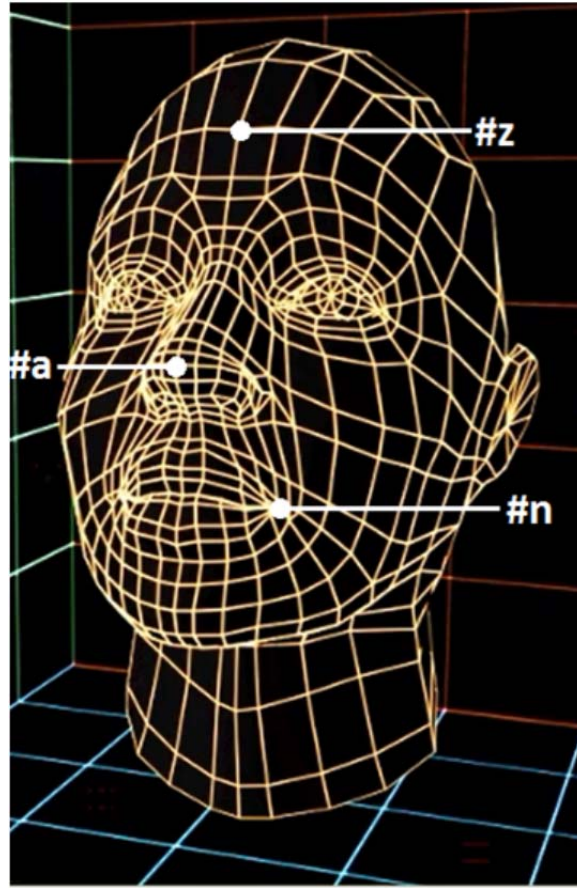
STATEMENT OF FACTS

I. 3D FACIAL ANIMATION

A computer-generated facial animation starts with a “neutral model,” which depicts a character’s face with a neutral expression. (BB4.) The neutral model is represented by a mesh that is made up of individual “vertices”—points in 3D space that sit on the model’s surface:

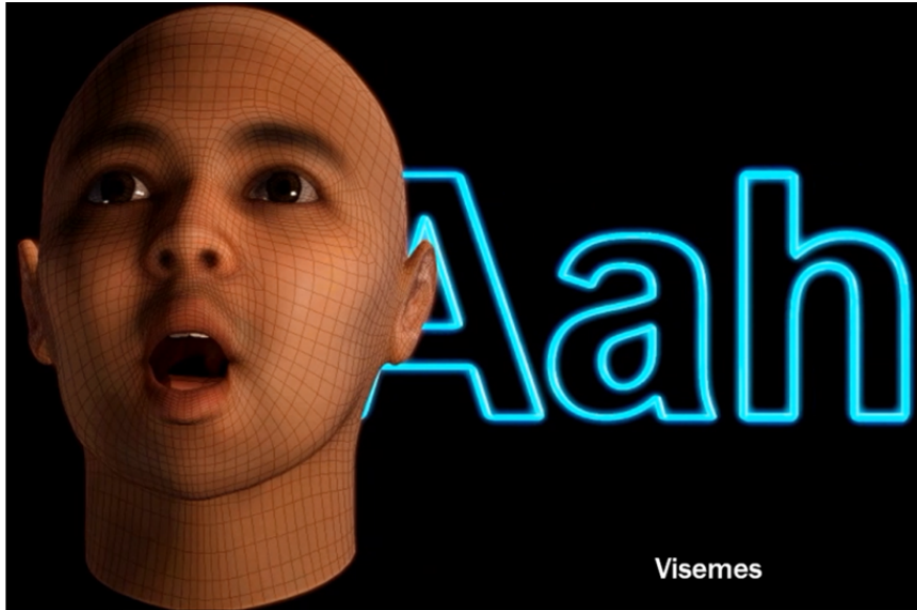
¹ The District Court held a *Markman* hearing in the cases consolidated under No. 12-cv-10322 (C.D. Cal.) on April 28, 2014. (A4009). Its *Markman* ruling issued on May 1, 2014. (A4155.) The defendants in the cases consolidated under No. 13-cv-01870 (C.D. Cal.) did not participate in claim construction.

² With its Opposition to Appellees’ Section 101 Motion, McRo submitted the expert declaration of Michael Gleicher, Ph.D. (A4946.) Although Appellees objected to the Gleicher Declaration on procedural grounds, the District Court considered the declaration and found that it supported unpatentability. (A16-17.)



(BB5 (showing #a, #n, and #z as exemplary vertices).)

To animate a character's speech, an animator—or software application—must know what the character will speak. An utterance is thus broken down into its constituent sound components, called phonemes. Phonemes are the “smallest units of speech,” each of which “corresponds to a single sound,” like “th,” “aah,” “ee,” or “oh.” (BB6.) Relatedly, a “viseme” (*i.e.*, “visual phoneme”) is what a face looks like while speaking a particular phoneme:



(BB7-8.)

II. THE PATENTS: AUTOMATING THE PRIOR ART

The Patents-in-Suit share an identical specification. Both purport to claim the exclusive right to perform rules-based lip-synchronized animation on a computer, by automating well-known and long-practiced steps that can be performed in the human mind or with pencil and paper. The patents acknowledge that their purpose is to allow “for rapid, creative, and expressive animation products to be produced in a very cost effective manner”—simply by using a computer to perform some of the work normally done manually by an animator. (See A32 [’576 Patent] at 2:38-44; *see also* A6121, Clip 4 [Defendants’ Tutorial].)

A. The Claimed Method Reflects Conventional Animation Practices

As the Patents-in-Suit admit, animators were creating animations with lip synchronization using a manual process substantially identical to the claimed computer-aided process at the time of the claimed invention. (*See* A32 at 1:14-17.)

First, the prior art animator would obtain a timed transcript of the sounds and phonemes the animated character is supposed to speak (called a “[t]ime aligned phonetic transcription[]” or “TAPT”). (*Id.* at 1:32-34; A3052 [PB Opening CC] at 10.) According to the Patents-in-Suit, the TAPT “can be created by hand, as they currently are in the traditional animation industry” or by automatic speech recognition programs. (A32 at 1:39-43.)

To animate a character’s mouth according to the TAPT, the prior art animator would use a “morph target” approach. In this practice, the animator would manually create a number of different mouth models, known as “morph targets.” These “morph targets” include a reference (or neutral) model and mouth models in several other positions:



(BB12; *see* A32 at 1:45-50.) The morph targets each comprise a set of vertices, each model having “the same number of vertices, and each vertex on each model logically correspond[ing] to a vertex on each other model.” (*Id.* at 1:50-57.) Put another way, the models are identical in overall construction and makeup (*i.e.*, each is the same “face”) and differ only as to where in 3D space each vertex is positioned.

Once the human animator has the morph targets for the different mouth shapes, the animator would determine how to move each vertex’s position from a neutral position (*i.e.*, the vertex’s baseline position) to its position in that particular target model (*i.e.*, morph target). To do this, the human animator would determine

the “delta set” for each morph target, *i.e.*, the difference between the neutral position and target model. Each delta set contains “[t]he deltas of each vertex on each morph target relative to [that same vertex on] the neutral,” “computed as a vector from each vertex *n* on the reference to each vertex *n* on each morph target.” (A32 at 1:57-62.) For example, the animator might determine that vertex1 needs to move (x,y,z) units in three dimensions from the neutral model, while vertex2 needs to move (x,y,z) from neutral. A “delta set” is a set of these transformations for each vertex on the model for one morph target. (*See id.*)

This gives the prior art animator the beginning and end points of the animation. Using the TAPT, the animator would decide what the animated face should look like at key points in time between the start and end times, and then “draw” the face at those times. To do this, the animator would manually give certain “weights” to each morph target at each such time, based on, for example, the current phoneme and what phonemes come earlier or later in the TAPT. (*Id.* at 1:63-2:15.) The animator weights the morph targets based on an internal set of rules developed from her experience and skills. (*Id.* at 2:29-30; *see also id.* at 1:63-2:28.) For example, an animator might know that, at a particular time, a character is halfway between a “tee” and “ooh” sound, and thus assign weights of .5 to “tee” and “ooh,” and a weight of 0 to all other morph targets. Each frame of

animation created at such a key point in time is called a “keyframe.” (*Id.* at 2:29-33.)

Finally, the animator would “fill in” the animation for the frames in between these keyframes to produce animation at a desired frame rate—a standard practice at the time of the Patents-in-Suit called “interpolation.” (*Id.* at 2:31-34.)

B. The Claims Simply Automate Conventional Techniques

The asserted claims merely automate the foregoing process using a generic computer, without disclosing any specialized, new, or improved hardware or software. (*See* A32 at 2:38-44.) Worse, the claims omit important steps in the overall animation process. First, the claimed method does not generate a TAPT, but instead requires the user to supply a TAPT using known methods. (A3049 [PB Opening CC].) Second, the claimed method does not cover the generation of morph targets; instead, the user must supply mouth models (morph targets) of her own creation. (A3050 [PB Opening CC]; *see* A33 at 4:4-14.) Third, the claimed method does not define what rules will be used to determine which morph weight set to apply based on the phonemes in the TAPT. (A33-34 at 4:36-5:45; A37 at 11:31-33.) Instead, the user must provide rules that specify which weightings should be used at certain key times. (*Id.*) The user of the claimed method would then apply these *user-supplied* rules to the *user-supplied* TAPT using a computer. (A34 at 5:46-6:2; A35 at 7:10-13.)

Importantly, the Patents-in-Suit are entirely agnostic as to what rules are used, so long as they meet certain basic requirements. (A36 at 9:23-26 (referring to the user-supplied set of rules as “extensible and freeform in the sense that they may be created as desired and adapted to a wide variety of animation characters, situations, and products”).) The patented claims merely require “a first set of rules that define output morph weight set stream as a function of *phoneme sequence* and *time of said phoneme sequence*.” (A37 at claim 1.)³

On appeal, McRo argues that Mr. Rosenfeld’s key insight was that “the extent to which any viseme is expressed is influenced by the context (surrounding visemes) and the pace (rate) of speech.” (BB16.) For example, McRo argues that the “phoneme sequence” limitation means that multiple phonemes must be considered at once, and the “time of said phoneme sequence” limitation means that the pace of speech must be considered. (*See, e.g.*, BB20, 29-30, 37, 44, 46, 49, 58, 60.) McRo also argues that “evaluating said plurality of sub-sequences against said first set of rules” confirms that the software must apply the rules to multiple phonemes at once. (BB23-25.)

³ Internal quotations, citations, and alterations omitted and emphasis added throughout, except as otherwise noted.

But McRo is unable to point to anything more than specific embodiments and attorney argument to support any such limitations. This is not surprising. There is no indication in the Patents-in-Suit that “phoneme sequence” means anything more than that the animation must be generated in the correct order, according to the sequence of the phonemes in the TAPT. Likewise, there is no indication that “time of said phoneme sequence” means anything more than that the animation should be properly synchronized with the speech. These features must be present in *any* lip-synchronization method. The claims simply do not include any limitation on or even complexity to the “rules” claimed therein. Any “rules” will do.⁴

Thus, just as in the prior art, the claims contemplate that these *user-supplied* “rules” will be applied to the *user-supplied* TAPT, and, using the *user-supplied* morph targets, generate the output morph weight sets. And, just as in the prior art, these morph weight sets are used to deform the neutral model, which animation is “then sent to a conventional computer animation system for integration with other animation.” (A36 at 9:18-21.) “Alternatively, the morph weight set stream can be

⁴ McRo’s brief expounds on the types of rules described in the specification. (BB20-23.) Yet, at the District Court, McRo prevailed in arguing that the *claimed* “set of rules” were simply a “group of instructions” and nothing more. *See* Section IV.B, *infra*.

used directly by an animation program or package, wither [sic] interpolated or not.” (*Id.* at 9:21-23.) The claimed invention similarly requires the user to interpolate among keyframes “using conventional methods.” (A35 at 7:13-18.)

Critically, the Patents-in-Suit acknowledge that, aside from the preamble of the independent claims (requiring automation), each step of the claimed method was well-known in the prior art and performed just as it had been conventionally:

'576 Patent, claim 1	Previously Done Manually	Automating Step
A method for automatically animating lip synchronization and facial expression of three-dimensional characters comprising:		A32 at 2:38-54
obtaining a first set of rules that define output morph weight set stream as a function of phoneme sequence and time of said phoneme sequence;	A32 at 1:63-2:28	
obtaining a timed data file of phonemes having a plurality of sub-sequences;	A32 at 1:32-34	
generating an intermediate stream of output morph weight sets and a plurality of transition parameters between two adjacent morph weight sets by evaluating said plurality of sub-sequences against said first set of rules;	A32 at 1:45-2:30	
generating a final stream of output morph weight sets at a desired frame rate from said intermediate stream of output morph weight sets and said plurality of transition parameters; and	A32 at 2:29-37	

applying said final stream of output morph weight sets to a sequence of animated characters to produce lip synchronization and facial expression control of said animated characters.	A32 at 2:29-37	
'278 Patent, claim 1	Previously Done Manually	Automating Step
A method for automatically animating lip synchronization and facial expression of three-dimensional characters comprising:		A32 at 2:38-54
obtaining a first set of rules that defines a morph weight set stream as a function of phoneme sequence and times associated with said phoneme sequence;	A32 at 1:63-2:28	
obtaining a plurality of sub-sequences of timed phonemes corresponding to a desired audio sequence for said three-dimensional characters;	A32 at 1:32-34	
generating an output morph weight set stream by applying said first set of rules to each sub-sequence of said plurality of sub-sequences of timed phonemes; and	A32 at 1:45-2:30, 2:29-37	
applying said output morph weight set stream to an input sequence of animated characters to generate an output sequence of animated characters with lip and facial expression synchronized to said audio sequence.	A32 at 2:29-37	

The *only* aspect of the claims that the Patents-in-Suit suggest is novel is performing the conventional method “automatically” using a general-purpose computer. (A37, claim 1.)⁵

⁵ McRo belatedly argues the claimed methods can be distinguished over the prior art on limitations other than the “automatically” step. (BB14-15.) To get

SUMMARY OF THE ARGUMENT

The asserted claims fail the Supreme Court’s two-step test for patentability.

Step One. The claims are directed to the abstract concept of synchronizing animated mouth movement to speech using undefined “rules.” That a human mouth looks a certain way when speaking certain sounds is a “pre-existing fundamental truth” that “exists in principle apart from any human action.” *Alice Corp. Pty. Ltd. v. CLS Bank Int’l.*, 134 S. Ct. 2347, 2356 (2014). A user of the claimed method is required to supply his own transcript of speech, rules reflecting how speech relates to mouth shape, and even mouth shapes to be used as the building blocks of animation. The Patents’-in-Suit instructions to simply apply these rules to this transcript using the supplied mouth shapes is purely abstract.

Supreme Court precedent confirms the abstractness of the claims. The Patents-in-Suit, like those in *Flook*, seek to claim no more than the use of some basic mathematical algorithm that can be performed solely with pencil and paper. In this case, the algorithm (the “extensible and freeform” “rules”) is not even set forth in the patents. (*See* A35-36 at 7:36-9:29; A4950-51 [Gleicher Decl.] ¶ 11-

there, McRo relies only on the generic descriptions of prior art in its own attorney-made claim construction tutorial. (*See id.*) Aside from that attorney argument, there is nothing in the record to support these statements, let alone evidence to disregard the Patents’-in-Suit clear admissions.

12.) As in *Flook*, the Patents-in-Suit merely seek to claim “an improved method of calculation,” which is unpatentable “even when tied to a specific end use.” *Parker v. Flook*, 437 U.S. 584, 595 n.18 (1978).

Diehr is distinguishable. In *Diehr*, “a physical and chemical process for molding precision synthetic rubber” was found not to be rendered unpatentable by the fact that a computer was used to compute the underlying mathematical equation. *Diamond v. Diehr*, 450 U.S. 175, 177, 185, 187 (1981). McRo’s argument that the inverse must be true—that the addition of a computer somehow makes an abstract, non-physical process patentable—fails as a matter of law and logic. See *OIP Techs. Inc. v. Amazon.com, Inc.*, No. 2012-1696, slip op. at 9 (Fed. Cir. June 11, 2015) (“However, we must read *Diehr* in light of *Alice*, which emphasized that *Diehr* does not stand for the general proposition that a claim implemented on a computer elevates an otherwise ineligible claim into a patent-eligible improvement.”).

This Court’s post-*Mayo* precedent also demonstrates the abstractness of the claims. McRo argues that the claimed method for “performing [a] process automatically,” “embodied in computer software for use with a computer,” is “no mere ‘idea having no particular concrete or tangible form.’” (BB38 (quoting *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 715 (Fed. Cir. 2014).) But, in *Ultramercial*, this Court held that even claims that implicate physical components

like a network, a computer, a log, and a display can be found to claim an abstract idea. 772 F.3d at 714-15. The allegedly “concrete” steps (in *Ultramercial* and here) amount to no more than using a computer to perform simple mathematics and do not confer patentability.

In *Digitech*, this Court held that a method that “employs mathematical algorithms to manipulate existing information to generate additional information is not patent eligible.” *Digitech Image Techs., LLC v. Elecs. For Imaging, Inc.*, 758 F.3d 1344, 1351 (Fed. Cir. 2014). The Patents-in-Suit claim nothing more—performing mathematical operations (based on a set of “rules”) on data to generate new data.

McRo’s attempts to analogize its Patents-in-Suit to those in *DDR* are unpersuasive. While the *DDR* patents were “necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks,” the claims here are not so limited. *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1257 (Fed. Cir. 2014). The claims are not tied to a computer at all—in fact, they can be performed solely by hand. (See A35-36 [’576 Patent] at 7:36-9:23; A4950-51[Gleicher Decl.] ¶ 13; A5775-A5780 [Markman Transcript] at 24:11-23 (McRo counsel confirming that effectuating the method by computer rather than by hand “is the invention”).)

Step Two. There is no “inventive concept” that saves the Patents-in-Suit. The specifications explicitly disclose that all limitations but one—the “automation” limitation—were well-understood, routine, and conventional in the computer animation industry. *See* Section IV, *infra*. Yet McRo argues that the claims’ requirement of a computer-implemented “set of rules” render them patentable. To the contrary, the inclusion of “extensible and freeform” “rules” adds nothing to the abstract idea. Although it argued at claim construction the rules were simply any “group of instructions,” McRo now attempts to narrow the limitation by referring to examples of certain rules contained in the specification. (BB46.) But the Patents-in-Suit make clear that these narrower types of rules are merely exemplary, and the claimed “rules” comprise no such requirement. (A36 at 9:66-10:13, 10:14-23.) Even if the claimed “rules” were so narrowed, they do not confer any meaningful limitations, as they are inherent in any process of synchronizing lip movement to speech.

McRo’s argument that the Patents-in-Suit represent a “technological improvement” is also unavailing. The Patents-in-Suit merely purport to take a pre-existing process and make it faster by automating it on a general-purpose computer. (A32 at 2:38-44.) That the claimed method might “aid in [a] technological goal”—which it does not even do—would not be enough to satisfy Step Two. (*See* BSAGB23.) The claims fail the patentability test because they do

no more than recite a previously-known method and instruct the user to “do it on a computer.”

The District Court’s Analysis. Although this Court considers the Section 101 issue *de novo*, the District Court’s opinion correctly found the claimed method unpatentable. The District Court found that the claims improperly attempt to “preempt the field” of automated “lip synchronization using a rules-based morph target approach,” (A19), and looked to the specification to properly discard conventional and routine activity. It also looked to the allegedly-novel rules limitation and found that it could not supply the “something more” required because the patent simply instructs the user to use some “rules”—“the user, not the patent, provides the rules.” (A18.)

Preemption. Were these Patents-in-Suit permitted to stand, McRo’s patents would “risk disproportionately tying up” the abstract idea claimed. *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1294 (2012). McRo’s attempts to read examples from the specification into the claimed “rules” requirement cannot avoid this result. That the claimed method is limited to 3-D lip synchronized animation that uses “morph weight sets” is precisely the type of field-of-use limitation that the Supreme Court has found insufficient to ameliorate concerns of preemption. *See Bilski v. Kappos*, 561 U.S. 593, 611 (2010). Finally, McRo’s unilateral recitation of allegedly non-infringing lip-synchronization

solutions does not resolve the preemption issue—especially where it relies on an improper reading of the claims after claim construction.

Machine-Or-Transformation. The Patents-in-Suit also fail under the machine-or-transformation test. The claimed methods are not tied to any particular machine—the specification explicitly states that any general-purpose computer would suffice. (*See* A36 at 9:17-20.) Nor do the claimed methods “transform” anything “into a different state or thing.” *Bilski*, 561 U.S. at 593. Instead, they merely claim a computer processing information to generate additional information, which is decidedly unpatentable. *Digitech*, 758 F.3d at 1349-50. McRo’s claims that the display of the final animation on a monitor or display changes the analysis are purely aspirational—the Patents-in-Suit do not claim this step. Nonetheless, any such “displaying” step would be insignificant postsolution activity insufficient to confer patentability. *Bilski*, 561 U.S. at 610.

Software Patents Generally. McRo’s (and BSA’s) alarmism regarding the state of software patents generally is misplaced. The Court is tasked with reviewing the unique facts and circumstances of this case—including that the Patents-in-Suit and patent-holder acknowledge that the purported invention is only to automate well-known, conventional “current practice” for automating lip synchronization using a general-purpose computer. (A32 at 1:44.) The Court

should not be persuaded to stray from this task—just as it was not so swayed by similar argument in *Alice* and numerous other Section 101 cases.

ARGUMENT

I. STANDARD OF REVIEW

This Court reviews a grant of judgment on the pleadings under the law of the regional circuit. *Allergan, Inc. v. Athena Cosmetics, Inc.*, 640 F.3d 1377 (Fed. Cir. 2011). The Ninth Circuit reviews *de novo* a district court’s grant of judgment on the pleadings. *Harris v. County of Orange*, 682 F.3d 1126, 1131 (9th Cir. 2012).

This Court reviews *de novo* the question of whether a claim is valid under Section 101. *Digitech*, 758 F.3d at 1348.

II. APPLICABLE LEGAL PRINCIPLES: ABSTRACT IDEAS ARE NOT ELIGIBLE FOR PATENT PROTECTION

Section 101 contains an important exception: laws of nature, natural phenomena, and abstract ideas are not patentable. *Alice* 134 S. Ct. at 2354. These principles cannot be patented because “they are the basic tools of scientific and technological work” and are “free to all men and reserved exclusively to none.” *Mayo*, 132 S. Ct. at 1293 (quoting *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972) and *Diamond v. Chakrabarty*, 447 U.S. 303, 309 (1980)).

The Supreme Court has established a two-part test for patent eligibility, including for computer-implemented methods. *See Alice*, 134 S. Ct. at 2355.

A. Step One

A patent on an abstract idea effectively preempts the idea itself, attempting to claim ownership of inventions that a patentee never conceived of and did not contribute to the state of the art by way of his patent application. *See Bilski* 561 U.S. at 610-11; *Mayo*, 132 S. Ct. at 1294.

Where a patent claim attempts to preempt a mathematical formula or algorithm, the Supreme Court has consistently found that claim to be directed to an abstract idea and therefore unpatentable subject matter.

In *Bilski*, the Supreme Court looked to precedent—namely *Benson* and *Flook*—to clarify what is an “abstract idea.” The *Benson* Court found that “converting ... numerals to pure binary numerals” was an abstract idea because “[a] contrary holding ‘would wholly pre-empt the mathematical formula and in practical effect would be a patent on the algorithm itself.’” *Bilski*, 561 U.S. at 610 (quoting *Benson*, 409 U.S. at 71, 72). The *Flook* Court held as abstract “a procedure for monitoring the conditions during the catalytic conversion process in the petrochemical and oil-refining industries.” *Id.* (discussing *Flook*, 437 U.S. at 594). Notably, if the underlying mathematical algorithm was “assumed to be within the prior art, the application, considered as a whole, contain[ed] no patentable invention,” and “the prohibition against patenting abstract ideas ‘cannot be circumvented by attempting to limit the use of the formula to a particular

technological environment’ or adding ‘insignificant postsolution activity.’” *Id.* (quoting *Flook*, 437 U.S. at 594 and *Diehr*, 450 U.S. at 191-192). Accordingly, the *Bilski* Court held that the concept of hedging “is an unpatentable abstract idea, just like the algorithms at issue in *Benson* and *Flook*.” *Id.* at 611-12.

Alice reinforced that a concept may be abstract even though it does not “exist[] in principle apart from any human action.” 134 S. Ct. at 2356. An “abstract idea” need not be a fundamental natural truth: “[t]he concept of risk hedging [it] identified as an abstract idea in [*Bilski*] cannot be described as a preexisting fundamental truth,” but was nonetheless an abstract idea. *Id.*

This Court has similarly held “that methods which can be performed mentally, or which are the equivalent of human mental work, are unpatentable abstract ideas—the ‘basic tools of scientific and technological work’ that are open to all.” *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1371 (Fed. Cir. 2011) (holding that a “mental process” is “a subcategory of unpatentable abstract ideas”) (quoting *Benson*, 409 U.S. at 67). When a patent’s claimed steps “could still ‘be made [using a] pencil and paper,’” the claims are directed to an unpatentable mental process. *Id.* (quoting *Flook*, 437 U.S. at 586).

B. Step Two

Where, as here, the claims are directed to an abstract idea, courts must at Step Two “consider the elements of each claim both individually and ‘as an

ordered combination’ to determine whether additional elements ‘transform the nature of the claim’ into a patent-eligible application.” *Alice*, 134 S. Ct. at 2355.

Transformation “into a patent-eligible application requires more than simply stating the abstract idea while adding the words ‘apply it.’” *Id.* at 2357 (quoting *Mayo*, 132 S. Ct. at 1294). A particular application of an abstract idea must “contain[] an ‘inventive concept’ sufficient to ‘transform’ the claimed abstract idea into a patent-eligible application.” *Id.* (quoting *Mayo*, 132 S. Ct. at 1294). Merely taking an abstract idea and adding steps (or breaking the idea into steps) involving “well-understood,” “routine,” or “conventional” activities does nothing to add an inventive concept to the abstract idea. *Mayo*, 132 S. Ct. at 1294; *Flook*, 437 U.S. at 590. Similarly, limiting the application of an abstract idea to a particular “field of use” or “adding token postsolution components” does not transform the idea into a patent-eligible invention. *Bilski*, 561 U.S. at 612.⁶ Important here, “the mere recitation of a generic computer cannot transform a patent-ineligible abstract idea into a patent-eligible invention.” *Alice*, 134 S. Ct. at 2358.

⁶ “Postsolution components” refer to inconsequential steps appended to an abstract idea that do not meaningfully limit the scope of the concept. *Flook*, 437 U.S. at 590 (rejecting the argument “that the presence of specific ‘post-solution’ activity” renders the performance of the mathematical formula patent-eligible).

III. STEP ONE: THE CLAIMS OF McRO'S PATENTS ARE DIRECTED TO AN ABSTRACT IDEA

A. The Claims At Issue Are Directed To The Abstract Idea Of Rules-Based Synchronization Of Animated Mouth Movement With Speech Using A Computer

The claimed methods are directed to a fundamental, abstract concept: the synchronization of animated mouth movement to speech based on undefined “rules” automated on a computer. Indeed, there can be little question that the idea that the human mouth looks a certain way while speaking particular sounds is a “pre-existing fundamental truth” that “exists in principle apart from any human action.” *Alice*, 134 S. Ct. at 2356. This concept is not only conventional, but is fundamental to human speech. And even when applied to the more particularized field of animation—where animators apply mathematical rules reflecting the intrinsic correlation between mouth movement and speech—the concept remains equally abstract.

The claims bear this out. The claims require that the user supply her own phonetic transcript of the speech and her own rules reflecting the correlation of that speech to mouth shape to convert that transcript into a series of morph weight sets that will be applied to the animation. *See* Statement of Facts II.B, *supra*. The claims then simply instruct the user to use a computer to apply those rules to the transcript—a simple mathematical operation that can be performed in a person’s

head or using a pencil and paper, but is admittedly faster using a computer.⁷ *Id.* The claimed method does not represent any concrete improvement in the technology used to perform animation or even the process of performing the animation itself. It simply sets forth the abstract concept of synchronizing mouth shape with speech, using a series of mathematical rules that the user must determine for herself, and then instructs the user to perform those steps “automatically” on a computer. Under controlling precedent, the claimed method cannot pass muster under Section 101.

B. Supreme Court Precedent Confirms The Abstractness Of The Underlying Concept

1. *Parker v. Flook* Is Directly On Point

In *Flook*, the Supreme Court determined that “a mathematical formula for computing ‘alarm limits’ in a catalytic conversion process was ... a patent-ineligible abstract idea,” even though the patents implemented the fundamental concept in a specific way and directed it toward a specific field. *Alice*, 134 S. Ct. at 2355 (discussing *Flook*, 437 U.S. at 594-95). The *Flook* Court recognized that,

⁷ Computer implementation is not enough to transform an abstract idea into patentable subject matter. *See, e.g., buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1351-52, 1354-55 (Fed. Cir. 2014); *Kroy IP Holdings, LLC v. Safeway, Inc.*, No. 2:12-CV-800-WCB, 2015 WL 3452469, at *13 (E.D. Tex. May 29, 2015) (Bryson, J.) (collecting cases).

although the patent there involved a specific algorithm, the claims were at bottom directed to the abstract concept of computing alarm limits using well-known math.

Here, too, the Patents-in-Suit claim no more than the use of some basic algorithm (comprising undefined “rules”) that implements fundamental mathematical formulae and relationships in a particular field. If anything, the underlying concept of the claims here is *more* abstract than those found unpatentable in *Flook* because the claims here do not even specify the algorithm to be applied.⁸ The patent claims here are as abstract as if the *Flook* claims claimed “extensible and freeform” algorithms for computing “alarm limits” in “a catalytic conversion process,” without specifying or claiming any specific algorithm at all.

As in *Flook*, the claimed method can be performed solely with pencil and paper. Indeed, the Patents-in-Suit provide a pencil-and-paper example of animating the word “hello.” (A35-36 at 7:36-9:23; *see also* A4950-51 [Gleicher Decl.] ¶ 13.) This example begins with a group of delta sets (A35 at 7:43-51), a set of rules (*id.* at 7:58-8:34), and a TAPT (*id.* at 8:43-51). By simply applying the set of rules to the TAPT, one may (in one’s mind or by using only pencil and paper) confirm that the appropriate output morph weight set stream is given. (*Id.* at 8:53-

⁸ As discussed in detail in Section IV.B, *infra*, the Patents-in-Suit do not claim any particular rules, but rather, the mere *idea* of using rules.

9:9.) This output morph weight set stream is to be interpolated “using conventional methods well known in the art.” (A36 at 9:11-14.) But patents that merely claim the performance of such computations—which could be done solely in one’s mind or using pencil and paper—are unpatentable. *Flook*, 437 U.S. at 594-95; *see also CyberSource*, 654 F.3d at 1371.

The Supreme Court’s analysis in *Flook* is also instructive in evaluating McRo’s argument that “the entire field of 3-D computer generated animation is inherently technological and tangible.” (BB37.) To the contrary, *Flook* made clear that application of an abstract idea to a specific field of use does not make it patentable: “a claim for an improved method of calculation, even when tied to a specific end use, is unpatentable subject matter....” 437 U.S. at 595 n.18. This is precisely what the Patents-in-Suit claim—the abstract concept of synchronizing mouth movement with speech using undefined rules automated on a generic computer. That the patents then contemplate (but do not claim) that the output of that basic process will be rendered as graphics and displayed—a specific end use, to be sure—does not make the underlying concept less abstract. *Id.* at 590; *see also Fuzzysharp v. Intel*, 595 Fed. App’x. 996 (Fed. Cir. 2015) (Rule 36 affirmance of unpatentability determination for claims employing a “bounding volume” in 3-D graphics method where the output is rendered on a display).

2. Appellant's Heavy Reliance on *Diamond v. Diehr* Is Misplaced

While *Flook* (and *Benson*) provide important guidance on claims that *are* directed to an abstract idea (including those at bar), the Supreme Court's decision in *Diamond v. Diehr* also provides useful guidance on claims that are *not*. Unsurprisingly, in the post-*Mayo* world, patent-holders like McRo have retreated to *Diehr* as a last resort in defending against unpatentability determinations. But such heavy reliance on *Diehr* is unfounded.⁹

The question in *Diehr* was “whether a process for curing synthetic rubber which includes in several of its steps the use of a mathematical formula” is patentable subject matter. 450 U.S. at 177. The Court determined that “[t]ransformation and reduction of an article ‘to a different state or thing’ is the clue to the patentability of a process claim that does not include particular machines.” *Id.* at 184. On that basis, the Court concluded that “a physical and chemical process for molding precision synthetic rubber products falls within the § 101 categories of possibly patentable subject matter.” *Id.* Importantly, that

⁹ There are—at minimum—unanswered questions as to the ongoing viability of the *Diehr* Court's holding and rationale in view of more recent Supreme Court authority, including *Bilski*, *Mayo*, and *Alice*. Those questions are not before this Court in this appeal, and the Court need not resolve them here. Even putting those questions aside, the facts and issue presented here are sufficiently distinguishable from those in *Diehr* to confirm the unpatentability of these claims.

“conclusion ... is not altered by the fact that in several steps of the process a mathematical equation and a programmed digital computer are used.” *Id.* at 185.

While McRo would have this Court focus on the **outcome** of *Diehr*, it is the Supreme Court’s **analysis** that is important here. *Diehr* confirms that the Supreme Court’s Section 101 holding was driven by the fact that the claimed process involved a **physical** transformation. *See id.* at 183 (“a series of acts, performed upon the subject-matter to be transformed and reduced to a different state or thing”); *see also id.* at 184 (“Industrial processes such as this are the types which have historically been eligible to receive the protection of our patent laws”); *id.* (“transformation of an article, in this case raw, uncured synthetic rubber, into a different state or thing”).

Diehr is thus in stark contrast to the claims at issue here. The question presented in *Diehr* was not whether the use of a computer can make an unpatentable process patentable, but whether the use of a **computer to help perform an (otherwise patentable) physical process** rendered the “process as a whole ... unpatentable subject matter.” *Id.* at 187; *see id.* at 185. Here, the claimed methods do not involve a physical process at all, let alone a physical transformation—they are directed to only the processing of data on a general-purpose computer. That is, of course, not enough.

Simply put, *Diehr* does not support a finding that the mere use of a computer somehow renders the claims patentable. McRo's argument to the contrary cannot be squared with the facts and rationale of *Diehr*, let alone the remainder of Supreme Court precedent applying Section 101. *Diehr* never suggested, much less held, that an abstract process that does not transform something abstract into a physical thing can be patent eligible. See *Alice*, 134 S. Ct. at 2358 (explaining that claims in *Diehr* were patent eligible "not because [they] involved a computer" but because they used an equation to improve a "process for curing rubber"); *OIP*, No. 2012-1696, slip op. at 9 ("However, we must read *Diehr* in light of *Alice*, which emphasized that *Diehr* does not stand for the general proposition that a claim implemented on a computer elevates an otherwise ineligible claim into a patent-eligible improvement."). Indeed, McRo's interpretation of *Diehr* would directly conflict with the Supreme Court's holdings in *Mayo* and *Alice*, not to mention *Flook* and *Benson*.¹⁰

¹⁰ A reading of *Diehr* that would bring it into conflict with *Flook* and *Benson* makes little sense given the *Diehr* Court's specific effort to harmonize the different outcomes by showing how factually distinguishable the cases were. *Diehr*, 450 U.S. at 185-88.

C. This Court’s Post-*Alice* Jurisprudence Confirms The Abstractness Of The Claims

1. *Ultramercial* Demonstrates That Claims With “Concrete” Steps May Nonetheless Be Directed To An Abstract Idea

In *Ultramercial*, this Court held unpatentable “a method for distributing copyrighted media products over the Internet where the consumer receives a copyrighted media product at no cost in exchange for viewing an advertisement, and the advertiser pays for the copyrighted content.” 772 F.3d at 712. The *Ultramercial* Court found that the claimed method “recites an abstraction—an idea, having no particular concrete or tangible form.” *Id.* at 715. Even though the *Ultramercial* claims necessarily implicated at least a network, a computer, a log, and a display (though not explicitly claiming them), the Court looked to the claims at issue and found the underlying idea was abstract. *Id.* at 714 (analyzing only the claims “because claims are the definition of what a patent is intended to cover”).

McRo attempts to distinguish *Ultramercial* by arguing that its method for “performing [a] process automatically,” “embodied in computer software for use with a computer,” is “no mere ‘idea, having no particular concrete or tangible form.’” (BB38 (quoting *Ultramercial*, 772 F.3d at 715).) But McRo’s claimed method is no more “concrete” or “tangible” than that in *Ultramercial*. Indeed, *Ultramercial*’s claims could similarly be described as “performing [a] process automatically ... embodied in computer software for use with a computer.”

(BB38.) The *Ultramercial* claims were abstract despite having steps related to memory/data access and information display like “accessing an activity log to verify ... the total number of times which the sponsor message has been previously presented,” “recording the transaction event to the activity log,” and “facilitating the display of a sponsor message to the consumer.” *Ultramercial*, 772 F.3d at 714. So too are the claims here directed to an abstract idea, despite McRo’s contention that they claim “concrete” steps—steps that amount to no more than applying mathematical formulae to generate an animation that may ultimately (outside the claims) be displayed to a user.

2. *Digitech* Holds That A Method Using Mathematical Algorithms To Manipulate And Create New Information, Without More, Is Directed To An Abstract Idea

In *Digitech*, this Court confirmed that “[w]ithout additional limitations, a process that employs mathematical algorithms to manipulate *existing information* to generate *additional information* is not patent eligible.” 758 F.3d at 1351. This is true “even if the solution is for a specific purpose.” *Id.* (quoting *Flook*, 437 U.S. at 595). Under *Digitech*, even McRo agrees that a patent claiming “simply a means of calculating numbers” is ineligible under Section 101. (BB40 (citing *id.*))

But this is precisely what the Patents-in-Suit attempt to claim: a process that does no more than “employ[] mathematical algorithms to manipulate existing information to generate additional information.” *Digitech*, 758 F.3d at 1351. The

claimed method requires the user to supply a TAPT and a set of rules—*Digitech's* “existing information.” Next, the claimed method requires that a generic computer should apply the existing rules to the existing TAPT, and then apply the resulting morph weight sets to a sequence of animated characters. These “apply” steps are nothing more than simple mathematical calculations. (See BB8-13 (explaining mathematics used in the 3-D lip-synchronized animation utilized by the Patents-in-Suit); A36 at 9:57-65 (an example of a mathematical “rule”).) Thus, a general-purpose computer simply performs mathematical steps to “apply” the set of rules to the TAPT, resulting in a stream of morph weight sets—*Digitech's* “additional information.”

Finally, McRo argues that the claimed method is not “simply a means of calculating numbers” by relying heavily on the claimed step of “applying said final stream of output morph weight sets to a sequence of animated characters....” (See BB40.) To do so, however, McRo must read this step to somehow require “tangible output” in the form of “video clips.” (BB38.) There is nothing in the record or in the Patents-in-Suit suggesting this additional limitation. The claims do not require a monitor or display. Nor do they claim actually displaying any animation in any form, which itself would be no more than insignificant postsolution activity in any event. The claims only require taking the output morph weight sets and mathematically applying them to a specific facial model.

(See BB8-13.) Thus, just as in *Digitech*, the Patents-in-Suit attempt to claim nothing more than the mathematical processing of “existing information” to create “additional information,” leaving them unpatentably abstract.

3. McRo’s Attempt To Analogize These Claims To Those In *DDR* Is Unpersuasive

McRo next strains to analogize its claims to those in *DDR*—this Court’s only post-*Alice* decision upholding subject matter patentability to date. (BB41-42.)

The claims here are nothing like those in *DDR*. The claims in *DDR* “do not recite a mathematical algorithm” or a “fundamental economic or longstanding commercial practice.” *DDR*, 773 F.3d at 1257. Instead, those claims “address a business challenge ... particular to the Internet.” *Id.* Importantly, the *DDR* Court found that the claims “do not merely recite the performance of some business practice known from the pre-Internet world along with the requirement to perform it on the Internet.” *Id.* McRo’s claims do precisely that—they “recite the performance of some [animation] practice known from the pre-[automation] world along with the requirement to [automate it on a computer.]”

The *DDR* Court also noted that the claims there met Section 101’s requirements because “the claimed solution is necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks.” 773 F.3d at 1257. The same is not true of the Patents-in-

Suit. In *DDR*, the claimed method allowed a person clicking a hyperlink on an Internet website to be transported not “away from a host’s website,” but instead to “a new, hybrid web page that merges content associated with the products of the third-party merchant with the stored ‘visually perceptible elements’ from the identified host website.” *Id.* What would this look like in “the pre-Internet world”? The question is unanswerable because the claimed method does not make sense outside the context of computers and the Internet.

What would the claimed method in this case look like in a pre-automation world? The Patents-in-Suit answer that question: it would look like the process described in the “background” of the specification or the pencil-and-paper example of animating “hello.” *See* Statement of Facts II.B, *supra*. In fact, it is undisputed that the claimed process can be done by pencil and paper. (A4950-51 [Gleicher Decl.] ¶ 13; A5780 [*Markman* Transcript] at 24:11-23 (McRo counsel confirming District Court’s conclusion that “you could do the same thing [claimed method] if you wanted to do it by hand but it would take a lot more time.”) In other words, the claimed method is not “necessarily rooted” in automation technology, or even in computer technology. It is a simple, mathematical process that can be performed by hand and is thus unpatentably abstract.

IV. STEP TWO: THERE IS NO INVENTIVE CONCEPT THAT RENDERS THE CLAIMS PATENTABLE

To be patentable, “[a] claim that recites an abstract idea must include additional features to ensure that the claim is more than a drafting effort designed to monopolize the abstract idea.” *Alice*, 134 S. Ct. at 2357. “Simply appending conventional steps, specified at a high level of generality, [is] not **enough** to supply an inventive concept.” *Id.* (original emphasis); *see also Mayo*, 132 S. Ct. at 1294.

Importantly, “[t]he introduction of a computer into the claims does not alter the analysis at *Mayo* step two.” *Alice*, 134 S. Ct. at 2357; *see also Dealertrack, Inc. v. Huber*, 674 F.3d 1315, 1333-34 (Fed. Cir. 2012). “[R]elying on a computer to perform routine tasks more quickly or more accurately is insufficient to render a claim patent eligible.” *OIP*, No. 2012-1696, slip op. at 8. Where, as here, a patent “emphasize[s] that the key distinguishing feature of the claims is the ability to automate or otherwise make more efficient traditional [] methods,” that computer-implemented automation is not enough. *Id.* Instead, “the relevant question is whether the claims here do more than simply instruct the practitioner to implement the abstract idea ... on a generic computer.” *Alice*, 134 S. Ct. at 2359. Here, the answer is no.

A. The Patents-in-Suit Admit That All Additional Limitations Were Conventional, Well-Understood, And Routine

Limitations that are conventional, well-understood, and routine cannot provide the “something more” required at Step Two. *Mayo*, 132 S. Ct. at 1294. Here, each limitation of the claimed method—except the “automatically” limitation—is explicitly acknowledged as precisely that. Indeed, the Patents-in-Suit specifically admit that manual animation based on phonemes and morph weights was “traditional.” (*See, e.g.*, A32 at 1:14-2:37.)

McRo attempts to side-step these admissions by arguing that these elements merely have some “supposed basis in prior art,” and are not “ubiquitous among those who work in the field.” (BB57, BB56.) But the Patents’-in-Suit admission that this was “[t]he current practice,” (A32 1:44), shows this is precisely the type of “well-understood, routine, conventional activit[y] previously known in the industry” that persons of skill were already doing and is thus insufficient to confer patentability at Step Two. *Alice*, 134 S. Ct. at 2359; *cf. Ariosa Diagnostics, Inc. v. Sequenom, Inc.*, No. 2014-1139, 2014-1144, concurring slip op. at 3 (Fed. Cir. June 12, 2015) (Linn, J., concurring) (noting that *Mayo* related to conventional activities that were the very steps that persons of skill were already doing in practice). A patent-holder is bound by a patent’s admissions about what was

known in the art.¹¹ See *PharmaStem Therapeutics, Inc. v. ViaCell, Inc.*, 491 F.3d 1342, 1362 (Fed. Cir. 2007); *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1570 (Fed. Cir. 1988).

B. The “Rules” Limitation Adds Nothing To The Claims

In an effort to confer patentability, McRo focuses on the “obtaining a first set of rules that define output morph weight set stream as a function of phoneme sequence and time of said phoneme sequence” limitation to try and make the claims concrete. (A37 at claim 1.)¹² McRo emphasized these claimed “rules” as “the crux of the invention” during claim construction. (A4866 at 86:9-15). Yet,

¹¹ McRo relies on the rejection of Appellee Naughty Dog’s IPR Petition to show what was or was not in the prior art at the time of filing of the Patents-in-Suit. This is, of course, a red herring. Whether or not the PTAB found that particular references selected by Naughty Dog disclose certain limitation(s) does not resolve whether those limitations were conventional, “current practice” as the Patents-in-Suit themselves describe.

Even further afield is McRo’s argument that Appellees’ noninfringement positions relating to modern products have some bearing on what was “conventional” in 1997. (BB56-58.) McRo has made no showing that Appellees’ current practices were used in 1997, let alone conventional at that time. And, even if they were, the fact that a noninfringing method is conventional does not mean that the claimed method was not also conventional.

¹² The ’278 patent words this limitation slightly differently. It is undisputed that the minor differences in claim language between the two Patents-in-Suit are not meaningful as they relate to the Section 101 analysis. (See A19 [Order] (“[t]he same is true for claim 1 of the ’278 Patent, which does not differ in a manner relevant to this analysis.”).) It is also undisputed that the asserted claims can all be treated together for purposes of the Section 101 analysis because McRo is not asserting any relevant differences between the claims.

McRo was forced to admit that the Patents-in-Suit do not actually claim any particular rules. (A4866-67 at 86:24-87:12; A4883 at 103:17-25; A35 at 9:23-26.). Indeed, neither the claims nor the specification place any additional limitations on these rules. To be sure, the specifications provide *examples* of such rules.¹³ But the Patents-in-Suit do not limit themselves to only these types of rules. And critically, none of these rule types are specified by the claims.

Instead, the claims purport to cover any rules that “define output morph weight set stream as a function of phoneme sequence and time of said phoneme sequence.” (A37 [’576 Patent], claim 1.) In other words, while the specification may provide examples of rules, the patents make clear that the claims apply to any rules that can be executed by the computer and not some specific subset. *See OIP*, No. 2012-1696, slip op. at 7. Just as in *OIP*, “the claims are exceptionally broad and the computer implementation limitations do little to limit their scope.” *Id.*

It is of course the *claims* that matter to the Section 101 analysis. *See Accenture Global Servs., GMBH v. Guidewire Software, Inc.*, 728 F.3d 1336, 1345 (Fed. Cir. 2013) (explaining that “the important inquiry for a § 101 analysis is to look to the claim” and “the level of detail in the specification does not transform a

¹³ There could be correspondence rules, transition rules, default rules, secondary rules, pre-processing rules, or post-processing rules. (BB20.)

claim reciting only an abstract concept into a patent-eligible system or method”); *Planet Bingo, LLC v. VKGS LLC*, 576 F. App’x 1005, 1008-09 (Fed. Cir. 2014) (nonprecedential).

McRo’s decision not to limit these “rules” was not an accident. The Patents’-in-Suit specification emphasizes that the claimed rules are “*extensible and freeform* in the sense that they may be *created as desired* and adapted to a wide variety of animation characters, situations, and products.” (A36 at 9:23-26.) Consistent with this, McRo opposed efforts to construe the “first set of rules” limitation as limited in any meaningful way. (A4169 [*Markman* Order].) Instead, McRo proposed that the limitation be construed merely as “a group of instructions.” (A3063 [PB Opening CC].) The District Court agreed with McRo substantively, but ruled that McRo’s construction was “word substitution” and concluded that no construction was necessary to confer McRo’s proposed claim scope. (A4171.)

1. McRo’s Eleventh-Hour Attempt To Unilaterally Narrow The “Rules” Limitation Does Not Save Its Patents

Despite proceeding through claim construction without urging any specific requirements of the “rules” limitation—and opposing the construction offered by Appellees—McRo now contends that the claimed “set of rules” require very specific types of input. Specifically, McRo argues that the claimed set of rules

must not just account for the sequence of phonemes being spoken (which *any* lip synchronization must do), but must instead consider “the phonemes preceding and/or following” the phoneme being processed at any given time. (BB46.) This new-found limitation is nowhere in the claims. Nor was it in McRo’s (successful) argument before the District Court regarding the scope of the limitation.¹⁴

In fact, the specification’s disclosure of the context-based rules McRo now promotes is clearly denoted as an exemplary embodiment. (A36 at 9:66-10:13 (“Another *example* of a secondary rule is to use alternative weight sets (or [*sic*] morph weight set sequences) for certain contexts of phonemes, for example, if an ‘oh’ is both preceded and followed by an ‘ee’ then use an alternate ‘oh.’”).) There is nothing in the record reflecting whether Mr. Rosenfeld actually believed this was

¹⁴ McRo should not be permitted to promote a different position as to claim scope on appeal than the one it took—and won—below. See *Triton Tech of Tex., LLC v. Nintendo of Am., Inc.*, 753 F.3d 1375, 1380 (Fed. Cir. 2014) (rejecting patentholder’s argument that a person of ordinary skill would have a certain understanding of a claim term to overcome a finding of indefiniteness because a party “cannot make that argument for the first time on appeal”); *Key Pharms. v. Hercon Labs. Corp.*, 161 F.3d 709, 715-16 (Fed. Cir. 1998) (disapproving a party’s “obvious attempt to salvage its invalidity case” by offering an alternative claim construction different from that which it argued at trial); *Northern Telecom Ltd. v. Samsung Elecs. Co.*, 215 F.3d 1281, 1290 (Fed. Cir. 2000) (noting that “we look with ‘extreme disfavor’ on appeals that allege error in claim constructions that were advocated below by the very party now challenging them”).

an important aspect of his lip-synchronization solution.¹⁵ But the record *does* confirm that neither he nor his patent attorney believed it was important enough to claim.

Precisely the same issues arise with respect to the second purported requirement of the “rules” limitation. On appeal, McRo argues that “time of said phoneme sequence” means that the claimed set of rules must not just take into account the time at which each phoneme is spoken (which *any* lip synchronization solution must do), but must instead consider “how quickly the character speaks.” (BB46.) McRo alleges that “how quickly the character speaks” changes not only the rate of the animation (which it must do in any lip-synchronization solution if the lips are to be “in time” with the character’s voice), but that “the extent to which any viseme is expressed is” affected by “the pace (rate) of speech.” (BB16.) But just as with the purported “phoneme sequence” limitation, this newly-asserted restriction is an exemplary embodiment at best. (*See* A36 at 10:14-23 (“Another secondary rule *could be, by way of illustration*, that if a phoneme is longer than a certain duration, substitute a different morph target.”).) It appears nowhere in the

¹⁵ McRo’s support is its expert’s Section 101 declaration, which post-dates and contradicts McRo’s own claim construction position. (BB17, 44.)

claims, let alone McRo's own position as to the scope of the "rules" limitation below.

C. McRo's Argument That The Patents-in-Suit Represent A "Technological Improvement" Is Unavailing

McRo's argument that the Patents-in-Suit provide some kind of "technological improvement" in the field of 3-D computer-generated lip-synchronization animation is premised on a basic misreading of the Patents-in-Suit. The Patents-in-Suit do not claim any improvement to any computer or computer-related hardware or other technology. The alleged invention simply does not make the computer itself operate faster or better.

Rather, the *only improvement* the Patents-in-Suit purport to claim over conventional prior art methods is that they make the process of creating lip-synchronized animation faster by automating the process on a general-purpose computer. (A32 ['576 patent] at 2:38-44; BB44.)¹⁶

McRo's argument that the Patents-in-Suit represent a "functional and palpable" improvement over the prior art is also unpersuasive, particularly insofar as it claims (without basis) that the Patents-in-Suit "enable[] a computer to do

¹⁶ McRo also argues "technological improvement" based on the "rules" limitation, but only insofar as that limitation includes the manufactured requirements regarding "*context* and *timing*" discussed in Section IV.B, *supra*. (See BB44 (original emphasis).) It does not.

something it could not do before.” (BB44-45.) For the same reason, McRo’s attorney-made claim construction tutorial video allegedly showing that the claimed process produces better results than prior art methods is inapposite. (BB45.) Nothing in the record even shows by what process these videos were created.

Ultimately, that the claimed method might “aid in [a] technological goal” cannot be enough to show the necessary “something more” at Step Two. (*See* BSAGB23.) If it were, *Alice*, *Bilski*, and numerous other cases would have been decided differently. *See, e.g., Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat. Ass’n*, 776 F.3d 1343, 1345 (Fed. Cir. 2014) (finding claims patent-ineligible even where they aided in the technological goal of “extracting data from hard copy documents using an automated digitizing unit ... recognizing specific information from the extracted data, and [] storing that information in a memory”); *I/P Engine, Inc. v. AOL Inc.*, 576 Fed. App’x. 982 (Fed. Cir. 2014) (nonprecedential) (holding claims patent-ineligible even where the patents aided in the technological goal of filtering Internet search results utilizing both content-based and collaborative filtering); *Digitech*, 758 F.3d at 1344 (holding claims patent-ineligible even where they aided in the technological goal of correcting colors in digital images).

D. The Argument That The Claims Do More Than Say “Do It On A Computer” Ignores Precedent And Misreads The Patents-in-Suit

McRo and BSA argue that the Patents-in-Suit “do not merely add to an abstract idea a bald instruction to perform the idea on a computer.” (*See* BSAGB21-22.) Specifically, BSA asserts that the claims contain sufficient additional detail beyond “do it on a computer” that “suggests they amount to a practical application of an idea, rather than effectively claiming the idea itself.” (*Id.* at 22.) BSA is mistaken, both on the law and on what the Patents-in-Suit claim.

BSA cites to both *Alice* and *buySAFE* as cases in which the claims “merely add to an abstract idea a bald instruction to perform the idea on a computer.” (*Id.* at 21.) But in both cases, the actual underlying claims were as detailed—if not more so—than the claims at issue here.

In *Alice*, the claims required that a computer “creat[e] a shadow credit record and a shadow debit record for each stakeholder party...; obtain[] from each exchange institution a start-of-day balance for each shadow credit record and shadow debit record; ... adjust[] each respective party’s shadow credit record or shadow debit record; ... [and] instruct[] on[e] of the exchange institutions to exchange credits or debits to the credit record and debit record of the respective parties....” 134 S. Ct. at 2352 n.2. In *buySAFE*, the claims required a computer

“receiv[e] ... a request from a first party; ... process[] ... the request by underwriting the first party...; [and] offer[], via a computer network, the transaction performance guaranty service....” 765 F.3d at 1352. Admittedly, the claims in those cases related to financial solutions, while the claims here relate to an animation solution. But that is a distinction without a difference.

Method claim 1 of the ’278 patent, for example, recites the steps of obtaining rules defining morph weights as a function of phoneme sequence and times, obtaining timed phoneme sub-sequences corresponding to a desired audio sequence, generating morph weights by applying the rules to the sub-sequences, and applying the morph weights to animate characters synchronized to the audio sequence—all steps which can be done purely by hand. (A49 at claim 1.) It is undisputed that the claimed process can be done by pencil and paper—even if doing so would not be “practical” for speed and efficiency reasons. (*See* A4950-51 [Gleicher Decl.] ¶ 13; A5780 [*Markman* Transcript] at 24:11-23 (McRo counsel confirming District Court’s conclusion that “you could do the same thing [claimed method] if you wanted to do it by hand but it would take a lot more time.”).)

In all three cases, the key observation is the same—the claims describe something that can be done without a computer and then use a computer to make that task quicker and more efficient. This is not enough to confer patentability. *Alice*, 134 S. Ct. at 2359; *OIP*, No. 2012-1696, slip op. at 7-8.

V. McRo's PREEMPTION ARGUMENT MISSES THE MARK

As McRo's opening brief acknowledges, preemption is the fundamental concern that underlies Section 101 jurisprudence. Yet, in arguing patentability, McRo makes three arguments that the scope of its claims are "no larger than 'the underlying discovery could reasonably justify,'" and thus do not risk disproportionately tying up an abstract idea. (BB49-51 (quoting *Mayo*, 132 S. Ct. at 1301).) Each argument fails.

A. McRo Cannot Avoid The Preemption Concern By Appealing To Unclaimed Embodiments Of "Rules"

McRo argues that the claims do not preempt the use of all rules relating to lip-synchronization animation because the claimed rules must "take into account *context* and *timing* of a phoneme sequence." (BB49 (original emphasis).) As explained above, this is based on a too-narrow reading of the patented claims. *See* Section IV.B, *supra*. The claim requirement of using a "phoneme sequence" in the rules does not necessarily mean that multiple phonemes must be considered at once, as McRo claims. Rather, it is so broad as to cover any lip-synchronization process that takes into account in what order the phonemes appear in the transcript. Of course, this is true of *any* intelligible lip-synchronization process. The claims are likewise so broad as to cover any lip-synchronization process that takes into

account the time at which phonemes in speech are spoken. Again, this is something that *any* intelligible lip-synchronization process must consider.

B. Field-Of-Use Limitations Do Not Nullify The Preemption Concern

McRo next claims that the rules require a specific type of output—a morph weight set or stream of multiple morph weight sets. (BB50-51.) As a concept, however, a “morph weight set” is simply a mathematical expression of what an animated face looks like at any given time. As McRo states, “when a morph weight set is applied to the neutral model, it transforms the model to a particular facial expression.” (BB12.) Because a “morph weight set” is simply one of many possible, mathematically-identical expressions of what an animated face looks like, the “morph weight set” limitation adds nothing meaningful to the claims. Even though using a different type of output (coupled with a narrower reading of “morph weight set” than McRo takes in this appeal) might not infringe, McRo’s claims are not necessarily patent-eligible simply because they do not preempt *all* uses of the claimed abstract idea.¹⁷

Indeed, the *Alice* Court rejected the same argument—that “the claims recite specific ways of accomplishing third-party intermediation—while leaving all other ways available.” *Alice*, 2014 WL 262088 (Pet. Br. 49). The *Bilski* Court also

¹⁷ For example, an animation system using the absolute position of facial vertices instead of differences in position of each vertex from the neutral model.

found that the claims were ineligible under Section 101 even though they limited the claimed abstract idea to certain fields (*i.e.*, energy markets). 561 U.S. at 611. As this Court explained in *Dealertrack*, “[t]he notion of using a clearinghouse generally and using a clearinghouse specifically to apply for car loans, like the relationship between hedging and hedging in the energy market in [*Bilski*] is of no consequence without more.” 674 F.3d at 1334 (finding claims ineligible even though they claimed only certain uses of the abstract idea (*i.e.*, only for auto loans) and “not all uses”). In any event, even if McRo were correct in its preemption arguments, “the absence of complete preemption does not demonstrate patent eligibility.” *Ariosa*, No. 2014-1139, 2014-1144, slip op. at 14. “Where a patent’s claims are deemed only to disclose patent ineligible subject matter under the *Mayo* framework, as they are in [*Ariosa* and] this case, preemption concerns are fully addressed and made moot.” *Id* at 14-15.

C. McRo’s Argument That Noninfringing Lip-Synchronization Solutions Might Exist Does Not Satisfy The Preemption Inquiry

Finally, to support a finding of no preemption, McRo cites three instances in which certain lip synchronization systems are alleged not to meet the limitations of the claimed method. (BB50-51.) The most glaring problem with McRo’s argument, though, is that it relies on a patent-holder being permitted to read the claims broadly for infringement but narrowly in the context of Section 101. As the

District Court noted, “Section 101 motions can place parties in unfamiliar and uncomfortable positions: here it is to the patentee’s advantage to identify noninfringing alternatives, and it is the accused infringer’s advantage to posit the lack of any; the reverse of their positions at the infringement and damages stages of the case.” (A14.) A patent-holder should not be permitted to shift its interpretation of its own patents to its advantage depending on the argument being made. *See Amazon.com, Inc. v. Barnesandnoble.com, Inc.*, 239 F.3d 1343, 1351 (Fed. Cir. 2001); *see also* n. 14, *supra*. In any event, McRo’s three examples fail.

First, McRo argues that, in its analysis of IPRs filed only by Appellee Naughty Dog, the PTAB found that certain lip-synchronization prior art does not use morph weight sets. (BB50; A14 [Order].) In fact, the PTAB did *not* find that cited references do not teach any particular elements of the claims. Rather, the PTAB held simply that the original petitions did not adequately explain where certain claim elements were found in the submitted references. (*See* A4377-84 [Decision Denying Institution].)¹⁸ Regardless, whether or not certain prior art references use morph weight sets has no bearing on whether the asserted claims disproportionately tie up the use of the abstract idea.

¹⁸ Of course, the nature of PTAB proceedings is that the PTAB does not independently review the entire references, but merely those portions cited by Naughty Dog. (*Id.*)

Second, McRo argues that Appellees’ noninfringement position requires a finding that the Patents-in-Suit claim more than an abstract idea. Not so. Taking this argument to its logical conclusion, there could never be preemption without a concession of infringement by every potential accused infringer. This does not make sense. No determination regarding infringement has been made—and Appellees’ denial of liability says nothing about Section 101’s requirements.

Third, McRo’s identification of systems that allegedly do not infringe is insufficient to preclude a finding of preemption. (*See* BB49-51.) McRo’s first example, using a rule that “does not take into account *context* and *timing* of a phoneme sequence,” is premised on the same incorrect interpretation of the “rules” requirement that McRo employs elsewhere in its brief. (BB49.) *See* Section IV.B, *supra*. McRo’s discussion of facial-capture technology also misses the mark—this technology is not remotely similar to the patented technology and any comparison is misplaced. (BB49-50.) Similarly, McRo’s claims that “hand-drawn, two-dimensional animation” and “manually produc[ed] 3-D computer-generated animation” are not preempted are inapposite. (*Id.* at 50.) At issue here is the patented methods’ disproportionate preemption of the abstract idea claimed.

VI. THE CLAIMS ALSO FAIL UNDER A MACHINE-OR-TRANSFORMATION ANALYSIS

The “machine-or-transformation test” is no longer “the sole test for deciding whether an invention is a patent-eligible ‘process’” under Section 101. *Bilski*, 561 U.S. at 604. However, the test remains a “useful and important clue, an investigative tool, for determining whether some claimed inventions are processes under § 101.” *Id.* Under this test, a process would be patent-eligible if “(1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing.” *Id.* at 600. Here, the claims fail both prongs.

First, the Patents-in-Suit are not “tied to a ***particular*** machine or apparatus.” The Patents-in-Suit state that they use merely “a conventional computer animation system” for at least portions of their processing. (A36 at 9:17-20.) As to the other steps of the claimed method, no hardware at all is mentioned in either the claims or the specification; these claimed steps are simply intended to be performed on a generic computer. This makes sense. The Patents-in-Suit claim nothing more than performing basic mathematics on a set of numbers to arrive at a new set (or sets) of numbers. Generic computers have been able to do this since the beginning of the information age. A “special-purpose machine” is neither needed to perform the claimed method, nor claimed or disclosed in the Patents-in-Suit. *See Dealertrack*, 674 F.3d at 1333 (finding claims unpatentable where, as here, the claims “do[] not

specify how the computer hardware and database are specially programmed to perform the steps claimed”).

Second, McRo’s arguments that the Patents-in-Suit are “transformative” are factually inaccurate and contrary to law. McRo first claims that various elements of the claimed process (*i.e.*, inputs to the claimed process) are “tangible” articles that are “transformed” “into a different state or thing.” (BB52-53.) But the claimed method does not include the use of any “articles” at all. Indeed, the patented claims address nothing but data—pure information stored within a computer as bits. The “time-aligned phonetic transcript,” the “stream of output morph weight sets and [] plurality of transition parameters,” and even the “sequence of animated characters” are all simply information—numbers being passed around (albeit in a particular form) inside a computer. As this Court held in *Digitech*, a particular composition of data in a computer “is not a tangible or physical thing,” and “[d]ata in its ethereal, non-physical form is simply information.” 758 F.3d at 1349-50.

Furthermore, McRo claims that “the concrete inputs are transformed into a video of the character speaking in sync with the dialogue that can be watched on a screen.” (BB52-53.) But the claimed method says nothing of producing a “video” “that can be watched on a screen.” It merely claims the step of applying a “stream of output morph weight sets to a sequence of animated characters to produce lip

synchronization and facial expression control of said animated characters.” (BB52.) Nowhere does the patent discuss (let alone claim) displaying images on a monitor or display.¹⁹

VII. McRo’s CRITICISM OF THE DISTRICT COURT’S ANALYSIS IS MISPLACED

Although this Court considers the Section 101 determination *de novo*, the District Court correctly applied Supreme Court precedent in finding the Patents-in-Suit unpatentably abstract. McRo’s (and BSA’s) arguments to the contrary are based on out-of-context reading of the District Court’s analysis, perhaps aimed at raising the specter of procedural anomalies that simply do not exist.

A. The District Court Properly Found The Claims Directed To An Abstract Idea At Step One

The District Court reviewed the independent claims and observed on “first blush” that “[f]acially, these claims do not *seem* directed to an abstract idea.” (A12-13 (“The Claims, *In Isolation*, Appear Tangible And Specific”).) But the District Court was right not to end its Step One analysis there. (A14 (“However, for purposes of the § 101 analysis, it is not enough to view the claims in isolation.”).) Indeed, Supreme Court precedent makes clear—and the District Court correctly observed—that, even at Step One, the claims must not be analyzed

¹⁹ Any such “displaying” step would be insignificant postsolution activity anyway.

in a vacuum. *See, e.g., Alice*, 134 S. Ct. at 2356 (finding the claims directed to an abstract idea because they claimed “a fundamental economic practice long prevalent in our system of commerce”).

As the District Court correctly noted (A6-12.), the caselaw provides no brightline “test” for Step One. *See Alice*, 134 S. Ct. at 2357 (explaining that the Supreme Court has not “delimit[ed] the precise contours of the ‘abstract ideas’ category”). Thus, without making a specific holding based on its “first blush” observation, the District Court properly considered the specific elements of the claims and Appellees’ arguments that the claimed method fails Step One: the Patents-in-Suit (i) “simply set[] forth the previously-known animation method as a series of mathematical steps, and instructs the user to perform those steps on a computer;” (ii) “attempt to wholly pre-empt the use of *any* rules in the automated lip-sync process, thereby patenting the abstract idea of using rules itself;” (iii) “attempt to claim no more than the use of a basic algorithm that implements fundamental mathematical formulae and relationships;” and (iv) claim a process that “can be performed solely with pencil and paper.” (A4677-79 [Motion].) After considering the arguments in the context of the claims and the admitted prior art, the District Court concluded that the claims attempt to impermissibly preempt the field of automated “lip synchronization using a rules-based morph target approach”

using computer-generated 3-D animation. (A19.) In so ruling, the District Court correctly found this was an abstract idea. (*Id.*)

McRo accuses the District Court of collapsing its Steps One and Two analyses and improperly excluding claim elements from its Step One analysis. (BB53-58.) McRo reasons that an analysis “dissecting” the claims (as it accuses the District Court of doing) should only be performed (if at all, McRo argues) in Step Two. (*Id.*) To be sure, the District Court observed that “[d]escribing this as a two-step test may overstate the number of steps involved.” (A7.) This is because, as the District Court correctly stated, “[i]f the claim is not ‘directed’ to a patent-ineligible concept, then the test stops at step one.” (*Id.*) If the claim is directed to an abstract concept, the District Court explained, then a finding (at Step Two) of an “‘inventive concept’ [] ‘transforms’ the nature of the claim into something patent eligible.” (*Id.*) The District Court explained that, when such an inventive concept is found to transform an abstract idea into a patent-eligible application, then “there was a categorization error in finding the claim ...‘directed to an abstract idea’ in step one.” (*Id.*) In short, the District Court clearly understood the bounds of Steps One and Two.

In fact, it is McRo that improperly conflates Steps One and Two—or at least conflates the District Court’s application of those steps. McRo erroneously argues that the District Court improperly “dissect[ed] the claims into old and new

elements” and “ignore[d] the presence of the old elements” in its Step One analysis, contravening *Diehr*. (BB54.)

But the District Court made clear that its analysis of Steps One and Two, though perhaps discussed in the Order in parallel, were nonetheless distinct:

Therefore, while tangible, the steps of (1) using a timed phoneme transcript, (2) setting morph weight sets at keyframes, or (3) interpolating between keyframes, are not “inventive steps” that could transform the claims herein into patent eligible subject matter, *if those claims are directed to an abstract idea*.

(A15; *see also* A14 (acknowledging that, “when determining whether a patent contains an adequate [Step Two] *inventive concept*, the Court must factor out conventional activity.”).) The District Court’s analysis of specific elements of the independent claims is a necessary part of the Section 101 analysis. (A14 [Order] (“[I]n addition to evaluating each step of the claim, the claims must be considered as an ordered combination.”).) That the District Court did not include separate headings for each step does not somehow invalidate its conclusion that the Patents-in-Suit are directed to an abstract idea at Step One.

B. The District Court Properly Concluded That The Claim Limitations Do Not Supply The Necessary Inventive Concept

1. Conventional Limitations Add Nothing To The Abstract Idea

At Step Two, the District Court properly considered the specific limitations of the claims. Although McRo mischaracterizes the analysis as using the “point of

novelty” test rejected in *Diehr*, the District Court’s analysis at Step Two properly discarded conventional and routine activity. The District Court looked to the Patents’-in-Suit express acknowledgement of limitations that were both conventional and well-known in the industry, and rightly determined that those limitations do not contain an “inventive concept sufficient to transform the claimed abstract idea into a patent-eligible application.” *Alice*, 134 S. Ct. at 2357. In so doing, the District Court followed the controlling precedents. *See* Section II, *supra*; *Ultramercial*, 772 F.3d at 715.

Significantly, the District Court’s Order made clear that it did not rigidly apply some “point of novelty” test, as McRo alleges. Rather, the District Court explained that, “where a claim recites tangible steps, but the only new part of the claim is an abstract idea, that may constitute a claim to an abstract idea.” (A15 (citing *Alice*, 134 S. Ct. at 2358 as disregarding the presence of a computer in Step Two analysis); *Mayo*, 132 S. Ct. at 1297-98 (disregarding step of administration of the drug in Step Two analysis))).)

Failing in its argument that the District Court improperly performed this analysis at Step One, McRo next argues that this analysis was not proper at Step Two either. Indeed, both McRo and BSA wrongly suggest that the District Court imported a Section 103 obviousness analysis into its Section 101 patentability analysis by allegedly seeking to exclude any “*any [claim] step with a basis in the*

prior art.” (BB56 (original emphasis); *see id.* (arguing that the District Court “fatally misconstrued the scope of the ‘conventional activity’ exclusion”); BSAGB24 (same).)

But while the claims may well be—and, in Appellees’ view, are—obvious in view of the prior art, the District Court did not conduct an analysis under Section 103. Instead, it correctly looked to the patents’ own discussion of conventional and routine animation techniques to determine that those elements were “well-understood, routine, conventional activities previously known in the industry” for purposes of Section 101. *Alice*, 134 S. Ct. at 2359.

2. The “Rules” Limitation Does Not Supply An Inventive Concept

Finally, the District Court looked to the “rules” limitation upon which McRo anchored its patentability position. The District Court correctly determined that the limitation did not introduce a sufficient “inventive step” to render the claims patentable. (*See* A18-19.) Specifically, the District Court noted that these “rules” are specified at the “highest level of generality.” (A18.) That is, the Patents-in-Suit merely state that the rules must take into account certain factors (timing and sequence of phonemes) and provide a certain type of output (a morph weight set stream). (A17.)

But, as the District Court noted, “[i]n operation and use, the user must manually set up default correspondence rules’ and ‘specify the durational information needed to generate appropriate transitionary [*sic*] curves between morph weight sets, such as transition start and end times.’” (A18 (quoting A34 at 6:46-54).) Indeed, while “the patent does provide an example of a very partial set of default and secondary rules,” it also states that this is “only an example of a set of rules” set forth “for illustrative purposes.” (*Id.* (quoting A35-36 at 7:36-9:23).) The District Court correctly concluded that “the user, not the patent, provides the rules.” (*Id.*) Thus, the District Court properly determined that the “rules” limitation does not add enough to the abstract idea to render it a patent-eligible application. (A18-19.)

VIII. McRo’s (AND BSA’S) ARGUMENTS REGARDING PATENTABILITY OF SOFTWARE PATENTS IN GENERAL IS UNFOUNDED

McRo attempts once again to make—and BSA joins—the policy arguments that failed before the District Court and have failed in *Alice* and the numerous other cases in which software is at issue. There is simply no merit to the fanciful allegation that an affirmance here would somehow “render all software patents ineligible.” (*See* BB62.) That question is simply not before this Court.

McRo’s policy argument, oddly, focuses on a hypothetical (and inaccurate) application of what it describes as the “district court’s approach” to a hypothetical

patent on “software that makes an anti-lock brake system [] work better.” (BB62-63.) There are least two problems with McRo’s argument.

First, McRo focuses entirely on its hypothetical software controlling a real-world, physical process: stopping a car. (*Id.*) This is not analogous to the claimed method here, which merely automates calculations that were conventional in the prior art. *See* Section II.B, *supra*. The patented process includes no “physical” aspect at all. At most, McRo can point to the (unclaimed, postsolution) display of an image on a screen. (BB38.)

Second, McRo’s proposed hypothetical patent may itself be unpatentable. After all, “a claim for an improved method of calculation,”—as in the patented claims and McRo’s hypothetical—“even when tied to a specific end use, is unpatentable subject matter.” *Flook*, 437 U.S. at 595 n.18. But that inquiry would depend on the specific claims of the hypothetical patent and the context within which those claims arose.

At base, this Court is not tasked with deciding the patentability of all software patents. Rather, the Court must decide the patentability of these particular claims. This analysis is driven by the facts of this case, including the unique circumstance that the Patents-in-Suit have explicitly acknowledged they simply automate well-known, conventional, “current practice” for synchronizing mouth movement and speech using a general-purpose computer. Indeed, many

Appellees themselves hold software patents and thus understand the importance of a case-by-case analysis of patentability for computer-implemented methods applying the *Alice/Mayo* framework.

In any event, McRo’s policy argument is not novel. It has been rejected time and again, in most every case in which a software-related patent has been found unpatentable under Section 101. As one example, the patentee in *Alice* made the same argument McRo makes now—that finding the claims there ineligible would have a “devastating impact in the software industry” and signal “the death of hundreds of thousands of patents including all ... software patents.” *Alice*, 2014 WL 1101443 (Reply Br. 20, 16); *see also Alice*, 2014 WL 262088 (Pet. Br. 55). The Supreme Court rejected those arguments, *Alice*, 134 S. Ct. at 2359, and so should this Court.

CONCLUSION

The judgment should be affirmed.

Dated: June 12, 2015

Respectfully submitted,

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ECF-3(B)(2) REPRESENTATION

Pursuant to this Court's Administrative Order Regarding Electronic Case Filing, the undersigned represents under ECF-3(b)(2) that counsel for Defendants-Appellees Naughty Dog, Inc., Konami Digital Entertainment, Inc., Obsidian Entertainment, Inc., Valve Corporation, Codemasters USA Group, Inc., Square Enix, Inc., Codemasters, Inc., The Codemasters Software Company Limited, Sony Computer Entertainment America LLC, and Sucker Punch Productions, LLC, have consented to their signatures on the Certificates of Interest and this Brief of Appellees.

Dated: June 12, 2015

/s/ Sonal N. Mehta
Sonal N. Mehta

Attorneys for Defendants-Appellees

Bandai Namco Games America Inc.; Sega of America, Inc.; Electronic Arts Inc.; Disney Interactive Studios, Inc.; Neversoft Entertainment, Inc.; Treyarch Corporation; Capcom USA, Inc.; Atlus U.S.A., Inc.; Infinity Ward, Inc.; LucasArts, a division of LucasFilm Entertainment Company Ltd. LLC; Warner Bros. Interactive Entertainment, a division of Warner Bros. Home Entertainment Inc.; Activision Publishing, Inc.; and Blizzard Entertainment, Inc.

CERTIFICATE OF SERVICE

In accordance with Fed. R. App. P. 25 and Fed. Cir. R. 25, I certify that on this day I served the foregoing via the Court's CM/ECF on the principal attorneys for each party.

Dated: June 12, 2015

/s/ Sonal N. Mehta
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CERTIFICATE OF COMPLIANCE

Pursuant to Fed. R. App. P. 32(a)(7)(C), I hereby certify that the body of this brief, beginning with the Abbreviations and Conventions on page xxiii, and ending with the last line of the conclusion on page 64, including headings, footnotes, and quotations, contains 13,982 words, in compliance with the type-volume limitation of Fed. R. App. P. 32(a)(7)(B)(i).

Dated: June 12, 2015

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Bandai Namco Games America Inc.;
Sega of America, Inc.; Electronic Arts
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Neversoft Entertainment, Inc.; Treyarch
Corporation; Capcom USA, Inc.; Atlus
U.S.A., Inc.; Infinity Ward, Inc.;
LucasArts, a division of LucasFilm
Entertainment Company Ltd. LLC;
Warner Bros. Interactive Entertainment,
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Entertainment Inc.; Activision
Publishing, Inc.; and Blizzard
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